

MATERIAL SAFETY DATA SHEET



SOLARIS

DATE PREPARED: 06/09/1994

MSDS No: 3899

KLEENUP® Grass & Weed Killer

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: KLEENUP® Grass & Weed Killer

PRODUCT DESCRIPTION: Herbicide

MANUFACTURER

The SOLARIS Group
of Monsanto Company

P.O. Box 5008

San Ramon, CA 94583-0808

EPA REG. NO.: 239-2509 PN: 5512

24 HR. EMERGENCY TELEPHONE NUMBERS

Emergency Phone 800-454-2333

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Wt. %	CAS Registry #
Glyphosate, Isopropylamine salt of N-(phosphonomethyl) glycine	0.5	38641-94-0
Acifluorfen, Sodium Salt, Sodium	< 0.2	62476-59-9
5-[2-Chloro-4-(trifluoromethyl)phenoxy]-2-nitrobenzoate		
INERT INGREDIENTS	~ 99.29	

"Inert Ingredients" is a term defined by the U.S. Environmental Protection Agency under the Federal Insecticide, Fungicide, and Rodenticide Act (40 CFR 158.153). It refers to any substance, other than an active ingredient, which is intentionally added to a pesticide product. Some inert ingredients may be hazardous chemicals, as defined by the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). The hazards associated with these inert ingredients have been included in this document.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Clear liquid

IMMEDIATE CONCERNS: - AVOID CONTACT WITH EYES
- KEEP OUT OF REACH OF CHILDREN

POTENTIAL HEALTH EFFECTS

EYES: This substance is slightly irritating to the eyes. Eye contact may include discomfort, tearing, redness, swelling, and blurred vision. See Toxicological Information, section 11.

SKIN: This substance is not expected to cause prolonged or significant skin irritation. If absorbed through the skin, this substance is considered practically non-toxic to internal organs.

INGESTION: If swallowed, this product may cause gastrointestinal tract irritation.

INHALATION: If inhaled, this substance is considered practically non-toxic to internal organs.

4. FIRST AID MEASURES

EYES: Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. No additional first aid should be necessary. However, if irritation persists, see a doctor.

SKIN: No first aid procedures are required. As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing.

INGESTION: If swallowed, immediately telephone a poison control center, emergency treatment center or a physician for advice. DO NOT make person vomit unless directed to do so by medical personnel. If medical advice cannot be obtained, then immediately take person and product container, with label, to an emergency treatment center.

INHALATION: If respiratory discomfort or irritation occurs, move the person to fresh air. See a doctor if discomfort or irritation continues.

ADDITIONAL INFORMATION: In case of medical emergencies involving this product, call day or night, (800) 454-2333.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: >200 to 0°F TAG CC

EXTINGUISHING MEDIA: Water Spray, dry chemical, CO2.

HAZARDOUS COMBUSTION PRODUCTS: Heating this

material (Acifluorfen component) may generate hydrogen chloride, hydrogen fluoride and nitrogen oxide.

FIRE FIGHTING PROCEDURES: This material will not burn. Smoke from fires involving this material may present unusual hazards. Avoid breathing smoke and mists. Avoid contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Read the entire document.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Soak up spilled material with paper towels and discard in trash.

LARGE SPILL: Liquid spills on floor or other impervious surfaces should be contained or diked, and should be absorbed with attapulgite, bentonite or other absorbent clays. Collect contaminated absorbent, place in plastic-lined metal drum and dispose of in accordance with instructions provided under Section 13, "DISPOSAL". Thoroughly scrub floor or other impervious surface with a strong industrial type detergent solution and rinse with water.

For liquid spills that soak into the ground, contact the applicable Federal, State and or County Health Dept. for disposal recommendations. If disposal is required then refer to Section 13 "DISPOSAL" for instructions.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under Section 13 "Disposal". Any recovered spilled liquid should be similarly collected and disposed of.

Do not contaminate water, foodstuffs or feed by storage or disposal.

GENERAL PROCEDURES: Observe all protection and safety precautions when cleaning up spills -- see Section 8, "EXPOSURE CONTROLS/PERSONAL PROTECTION". For help with any spill, leak, fire or exposure involving this material, call day or night (800) 454-2333.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Keep pesticide in original container. Store in a secure, preferably locked, storage area. Protect container from freezing.

STORAGE TEMPERATURE: Do not store below 32°F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: No special ventilation is usually necessary. However, if operating conditions create high airborne concentrations of this material, special ventilation may be needed.

PERSONAL PROTECTION

EYES AND FACE: For application of product in accordance with label instructions, no special eye protection is needed.

Handling of the product is not likely to present an eye exposure concern during normal handling. In the event of an accidental discharge of the material during manufacture or handling which could cause eye contact, workers should wear goggles or a face shield.

SKIN: No special skin protection is usually necessary. Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing protective clothing. Wash thoroughly with soap and water after handling.

RESPIRATORY: Handling of the product is not likely to present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material during manufacture or handling which produces a heavy mist, workers should put on respiratory protection equipment. Consult respirator manufacturer to determine appropriate type of equipment. Observe respirator use limitations specified by NIOSH MSHA or the manufacturer.

For application of product in accordance with label instructions, no special respiratory protection is required.

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200):

<u>Chemical Name</u>	<u>EXPOSURE LIMITS</u>		
	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>ACGIH ST</u>
Sodium	None	None	None
5-[2-Chloro-4-(trifluoromethyl)phenoxy]-2-nitrobenzoate	None	None	None
3-iodo-2-propynyl butyl carbamate	None	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE: Clear yellow liquid

pH: ~5 to 6

PERCENT VOLATILE: Not Determined

VAPOR PRESSURE: Not Determined

BOILING POINT: No Data Available

FREEZING POINT: No Data Available

MELTING POINT: No Data Available

SOLUBILITY IN WATER: Miscible with water.

EVAPORATION RATE: Not Determined

VISCOSITY: ~3 to 4cps (Brookfield)

COMMENTS:

DENSITY: 8.3 lb/gal

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: For Aciflourfen: HCL, HF, NOx during combustion.

INCOMPATIBLE MATERIALS: May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

11. TOXICOLOGICAL INFORMATION

ACUTE

EYES: Corneal involvement or irritation clearing in 7 days or less. The Draize Eye Irritation Score (range, 0-110) in rabbits is 2.0.

DERMAL LD₅₀: Mild to slight irritation at 72 hours. (No irritation or slight erythema.) The Draize Skin Primary Irritation Score (range, 0-8) for a 4-hour exposure (rabbits) is 0. The dermal LD50 in rabbits is greater than 5 g/kg.

ORAL LD₅₀: The oral LD50 in rats is greater than 5 g/kg.

INHALATION LC₅₀: The 4-hour Inhalation LC50 in rats is > 6.3 mg/l.

CARCINOGENICITY:

IARC: Sodium acifluorfen, one of the active ingredients in this product, has been designated as a probable human carcinogen by the U.S. EPA.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: This material may be toxic to aquatic organisms and should be kept out of sewage and drainage systems and all bodies of water.

Environmental toxicity data for Sodium Acifluorfen:

Mallard Duck LD50 - 4187 mg/kg Rainbow Trout 96hr LC50 - 54mg ai/l
Bobwhite Quail LC50 >10,000 mg/kg Channel Catfish 96 hr LC50 - 188mg/l
Mallard Duck LC50 >10,000 mg/kg Daphnia 48 hr LC50 - 28 mg ai/l
Fiddler Crab 96 hr LC50 >1000 mg/l Grass Shrimp 96 hr LC50 - 446 mg/l
Freshwater Clam 96 hr LC50 - 150 mg/l
Eastern Oyster 48 hr EC50 - 74 mg/l
Bobwhite Quail - No reproductive impairment up to 20 ppm
Mallard Duck - No reproductive impairment up to 100 ppm
Bluegill 96 hr LC50 - 31 mg ai/l (static)
Bluegill 96 hr LC50 >32 mg ai/l (dynamic)

Studies performed with a concentrated solution of the isopropylamine salt of glyphosate indicate the following:

MON 0139 Technical (62%)
48-hr LC50 Daphnia: 930 mg/L, Practically Nontoxic
96-hr LC50 Bluegill: >1,000 mg/L, Practically Nontoxic
96-hr LC50 Trout: >1,000 mg/L, Practically Nontoxic
96-hr LC50 Carp: >10,000 ppm, Practically Nontoxic

13. DISPOSAL CONSIDERATIONS

FOR LARGE SPILLS: Material collected that cannot be reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State or local procedures.

PRODUCT DISPOSAL: The Solaris Group is committed to responsible environmental practices and recommends that all of the product be used up, carefully following all label directions and precautions.

If necessary to dispose of partially filled product container, then securely wrap it in several layers of newspaper and discard in trash.

EMPTY CONTAINER: Do not reuse container. Rinse thoroughly

before discarding in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Not Regulated

PRIMARY HAZARD CLASS/DIVISION: None

UN/NA NUMBER: NONE

PACKING GROUP: NO

U.S. SURFACE FREIGHT CLASS: Tree or weed killing compounds, NOI, Density of 20 lbs. or greater per cu. ft.

AIR (ICAO/IATA)

PROPER SHIPPING NAME: Not Regulated

SPECIAL SHIPPING NOTES: The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

PRODUCT CLASSIFICATION UNDER SECTION 311 OF SARA				
ACUTE:	CHRONIC:	FIRE:	REACTIVITY:	PRESSURE
YES	NO	NO	NO	GENERATING: NO

TITLE III NOTES: Immediate (acute) health hazard: Product is slightly irritating to the eyes.

16. OTHER INFORMATION

HMIS CODES

FIRE: 0 **HEALTH:** 1 **REACTIVITY:** 0 **PROTECTION:** -

NFPA CODES

FIRE: 0 **HEALTH:** 1 **REACTIVITY:** 0 **SPECIAL:** -

APPROVAL DATE: 11/01/1994

REVISION SUMMARY New MSDS

COMMENTS: For additional information concerning this product, call the SOLARIS Groups Consumer Helpline at 800-225-2883.

MANUFACTURER DISCLAIMER: This Material Safety Data Sheet (MSDS) contains health, safety and environmental information for you and your employees. It does not replace the precautionary language, use directions, or the storage and disposal information found on the product label. Information contained in this MSDS will help you to prepare for emergency response and to meet community right-to-know, emergency response and reporting requirements under SARA Title III and many other laws. Emergency response agencies and health care providers will also find this additional information useful.

Use of this product is regulated by the U.S. Environmental Protection Agency (EPA) through the approved label copy. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Monsanto Company and The Solaris Group make no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determinations as to its suitability for their purposes prior to use. In no event will Monsanto Company or The Solaris Group be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.